Please provide the following information, and submit to the NOAA DM Plan Repository.

Reference to Master DM Plan (if applicable)

As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

1. General Description of Data to be Managed

1.1. Name of the Data, data collection Project, or data-producing Program:
2012 - 2014 USGS Lidar: Seneca Watershed, NY

1.2. Summary description of the data:
The Light Detection and Ranging (LiDAR) dataset is a survey of the Seneca NY Watershed project area. The entire survey area for Seneca encompasses approximately 1638 square miles. The LiDAR point cloud was flown at a nominal post spacing of 1.5 meters for unobscured areas. The LiDAR data and derivative products produced are in compliance with the U.S. Geological Survey National Geospatial Program LIDAR Base Specifications, Version 1.0. The flight lines were acquired by Northrop Grumman Corporation and Digital Aerial Solutions (DAS) and the data was post processed by Northrop GrummanAdvanced GEOINT Solutions Operating Unit (AGSOU), which was flown over twelve missions from May 5,2012-May 6,2012, November 19,2013-November 21,2013, April 17,2014-April 24,2014, June 15,2014. Derivative products from the aerial acquisition include: raw point cloud data in LAS v1.2 format, classified point cloud data in LAS v1.2 format, bare earth surface (raster DEM) tiles in 32-bit floating point raster ERDAS .IMG format, breaklines in ESRI Arc Shape format, control points in ESRI Arc Shape format, project report, and FGDC compliant XML metadata.

1.3. Is this a one-time data collection, or an ongoing series of measurements?
One-time data collection

1.4. Actual or planned temporal coverage of the data:
2012-05-05, 2012-05-06, 2013-11-19, 2013-11-20, 2014-04-17, 2014-04-18, 2014-04-24, 2014-06-15

1.5. Actual or planned geographic coverage of the data:
W: -78.517741528, E: -75.285325278, N: 43.289497722, S: 42.08447425

1.6. Type(s) of data:
(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)
Model (digital)

1.7. Data collection method(s):

(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)

1.8. If data are from a NOAA Observing System of Record, indicate name of system:

1.8.1. If data are from another observing system, please specify:

2. Point of Contact for this Data Management Plan (author or maintainer)

2.1. Name:
NOAA Office for Coastal Management (NOAA/OCM)

2.2. Title:
Metadata Contact

2.3. Affiliation or facility:
NOAA Office for Coastal Management (NOAA/OCM)

2.4. E-mail address:
coastal.info@noaa.gov

2.5. Phone number:
(843) 740-1202

3. Responsible Party for Data Management
Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.

3.1. Name:

3.2. Title:
Data Steward

4. Resources
Programs must identify resources within their own budget for managing the data they produce.

4.1. Have resources for management of these data been identified?
Yes

4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):
Unknown

5. Data Lineage and Quality
NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality,

objectivity, utility, and integrity of information which it disseminates.

5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible

(describe or provide URL of description):

Process Steps:

- 2014-04-24 00:00:00 - The ABGPS, inertial measurement unit (IMU), and raw scans are collected during the LiDAR aerial survey. The ABGPS monitors the xyz position of the sensor and the IMU monitors the orientation. During the aerial survey, laser pulses reflected from features on the ground surface are detected by the receiver optics and collected by the data logger. GPS locations are based on data collected by receivers on the aircraft and base stations on the ground. The ground base stations are placed no more than 40 km radius from the flight survey area.
- 2014-05-05 00:00:00 - The ABGPS, IMU, and raw scans are integrated using proprietary software developed by the airborne sensor manufacturer and delivered with each of the two sensors used on this project the Optech System and the Leica System. The resultant file is in a LAS binary file format. The LAS version 1.2 file format can be easily transferred from one file format to another. It is a binary file format that maintains information specific to the LiDAR data (return number, intensity value, xyz, etc.). The resultant points are produced in the NAD83 UTM 18 North Coordinate System, with units in Meters and referenced to the NAVD88 datum. The LiDAR mass points were processed in American Society for Photogrammetry and Remote Sensing LAS 1.2 format. The header file for each dataset is complete as defined by the LAS 1.2 specification. The datasets were divided into a 1500 meter by 1500 meter tiling scheme, named according to the US National Grid scheme. The tiles are contiguous, do not overlap, and are suitable for seamless topographic data mosaics that include no "no data" areas. The names of the tiles include numeric column and row designations and all files utilize the LAS file extension
- 2014-06-10 00:00:00 - The unedited data are classified to facilitate the application of the appropriate feature extraction filters. A combination of proprietary filters are applied as appropriate for the production of bare earth digital elevation models (DEMs). Interactive editing methods are applied to those areas where it is inappropriate or impossible to use the feature extraction filters, based upon the design criteria and/or limitations of the relevant filters. These same feature extraction filters are used to produce elevation height surfaces.
- 2014-06-18 00:00:00 - Filtered and edited data are subjected to rigorous QA/QC, according to the Northrop Grumman, Advanced GEOINT Solutions Operating Unit Quality Control Plan and Procedures. A series of quantitative and visual procedures are employed to validate the accuracy and consistency of the filtered and edited data. Ground control is established by Northrop Grumman, Advanced GEOINT Solutions Operating Unit and GPS-derived ground control points (GCPs) in various areas of dominant and prescribed land cover. These points are coded according to land cover, surface material, and ground control suitability. A suitable number of points are selected for calculation of a statistically significant accuracy assessment,

as per the requirements of the National Standard for Spatial Data Accuracy. A spatial proximity analysis is used to select edited LiDAR data points within a specified distance of the relevant GCPs. A search radius decision rule is applied with consideration of terrain complexity, cumulative error, and adequate sample size. Accuracy validation and evaluation is accomplished using proprietary software to apply relevant statistical routines for calculation of Root Mean Square Error (RMSE) and the National Standard for Spatial Data Accuracy (NSSDA), according to Federal Geographic Data Committee (FGDC) specifications.
- 2014-06-18 00:00:00 - The Bare Earth DEM was extracted from the raw LIDAR products and attributed with the bare earth elevation for each cell of the DEM. Bare Earth DEMs do not include buildings, vegetation, bridges or overpass structures in the bare earth model. Where abutments were clearly delineated, this transition occurred at the junction of the bridge and abutment. Where this junction was not clear, the extractor used their best estimate to delineate the separation of ground from elevated bridge surface. In the case of bridges over water bodies, if the abutment was not visible, the junction was biased to the prevailing stream bank so as not to impede the flow of water in a hydrographic model. Bare earth surface includes the top of water bodies not underwater terrain, if visible.
- The NOAA Office for Coastal Management (OCM) downloaded 2177 laz files from the USGS' rockyFTP website. The files contained elevation and intensity measurements for the project area. The data were in UTM Zone 18, NAD 1983 (2011), meters coordinates and NAVD88 (Geoid12B) elevations in meters. The data were classified as: 1 - Unclassified, 2 - Ground, 7 - Noise, 9 - Water, 10 - Ignored Ground, 11 - Withheld, 17 - Overlap Default, 18 - Overlap Ground. The NOAA Office for Coastal Management processed all classifications of points to the Digital Coast Data Access Viewer (DAV). OCM performed the following processing on the data for Digital Coast storage and provisioning purposes: 1. An internal OCM script was run to check the number of points by classification and by flight ID and the gps and intensity ranges. 2. Internal OCM scripts were run on the laz files to convert from orthometric (NAVD88) elevations to ellipsoid elevations using the Geoid 12B model, to convert from UTM Zone 17, NAD 1983 (2011), meters coordinates to geographic coordinates, to assign the geokeys, to sort the data by gps time and zip the data to database and to http.

5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other plan:

5.2. Quality control procedures employed (describe or provide URL of description):

6. Data Documentation

The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides

links to resources and tools for metadata creation and validation.

6.1. Does metadata comply with EDMC Data Documentation directive?

No

6.1.1. If metadata are non-existent or non-compliant, please explain:

Missing/invalid information:
- 1.7. Data collection method(s)
- 3.1. Responsible Party for Data Management
- 5.2. Quality control procedures employed
- 7.1.1. If data are not available or has limitations, has a Waiver been filed?
- 7.4. Approximate delay between data collection and dissemination
- 8.3. Approximate delay between data collection and submission to an archive facility

6.2. Name of organization or facility providing metadata hosting:

NMFS Office of Science and Technology

6.2.1. If service is needed for metadata hosting, please indicate:

6.3. URL of metadata folder or data catalog, if known:

https://www.fisheries.noaa.gov/inport/item/59111

6.4. Process for producing and maintaining metadata

(describe or provide URL of description):

Metadata produced and maintained in accordance with the NOAA Data Documentation Procedural Directive: https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC_PD-Data_Documentation_v1.pdf

7. Data Access

NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.

7.1. Do these data comply with the Data Access directive?

Yes

7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?

7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:

7.2. Name of organization of facility providing data access:
NOAA Office for Coastal Management (NOAA/OCM)

7.2.1. If data hosting service is needed, please indicate:

7.2.2. URL of data access service, if known:
https://coast.noaa.gov/dataviewer/#/lidar/search/where:ID=9066
https://coast.noaa.gov/htdata/lidar3_z/geoid18/data/9066

7.3. Data access methods or services offered:
Data is available online for bulk or custom downloads

7.4. Approximate delay between data collection and dissemination:

7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:

8. Data Preservation and Protection

The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.

8.1. Actual or planned long-term data archive location:
(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)
NCEI_CO

8.1.1. If World Data Center or Other, specify:

8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:

8.2. Data storage facility prior to being sent to an archive facility (if any):
Office for Coastal Management - Charleston, SC

8.3. Approximate delay between data collection and submission to an archive facility:

8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?
Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection
Data is backed up to tape and to cloud storage.

9. Additional Line Office or Staff Office Questions

Line and Staff Offices may extend this template by inserting additional questions in this section.